

**Amendments to the Claims:**

*This listing of claims will replace all prior versions, and listings, of claims in the application:*

Kindly cancel claims 1 - 13 without prejudice, in favor of new claims 14 - 26.

Claims 1 - 13. (Cancelled)

14. (New) A process for producing an  $\text{Si}_3\text{N}_4$ -coated  $\text{SiO}_2$  shaped body from an  $\text{SiO}_2$  green body, wherein a precursor which is suitable for forming an  $\text{Si}_3\text{N}_4$  sintered layer is applied to a surface of the amorphous, open-pore  $\text{SiO}_2$  green body, and then the precursor is converted in situ into an  $\text{Si}_3\text{N}_4$  sintered layer by irradiation with a laser beam.

15. (New) The process of claim 14, wherein the laser beam is the beam from a  $\text{CO}_2$  laser.

16. (New) The process of claim 14, wherein the  $\text{SiO}_2$  shaped body is a solar crucible, and the precursor is applied to the inner-side surface of the  $\text{SiO}_2$  green body.

17. (New) The process of claim 14, wherein the precursor which is suitable for forming an  $\text{Si}_3\text{N}_4$  sintered layer is selected from the group consisting of  $\text{Si}_3\text{N}_4$  powder, silicon powder, silicon oxide/carbon mixtures and polysilazanes.

18. (New) The process of claim 17, wherein the precursor is an  $\text{Si}_3\text{N}_4$  powder.

19. (New) The process of claim 18, wherein the  $\text{Si}_3\text{N}_4$  powder has a grain size of between 100 nm and 100  $\mu\text{m}$ .

20. (New) The process of claim 18, wherein the  $\text{Si}_3\text{N}_4$  powder is applied in the form of an  $\text{Si}_3\text{N}_4$  powder dispersion by spraying the surface of the  $\text{SiO}_2$  green body, and is then dried.

21. (New) The process of claim 20, wherein the dispersion contains a dispersant selected from the group consisting of alcohols, acetone and water.

22. (New) The process of claim 19, wherein the  $\text{Si}_3\text{N}_4$  powder layer has a layer thickness of from 1 to 1000  $\mu\text{m}$ .

23. (New) The process of claim 14, wherein the  $\text{SiO}_2$  green body, after the precursor has been applied, is irradiated by a laser beam with a focal spot diameter of at least 2 cm.

24. (New) The process of claim 14, wherein the laser beam has a radiation power density of from 50 W to 500 W per square centimeter.

25. (New) The process of claim 14, wherein the formation of the  $\text{Si}_3\text{N}_4$  sintered layer takes place at a temperature of between 1000°C and 1600°C, particularly preferably between 1100°C.

26. (New) The process of claim 14, wherein the irradiation is carried out uniformly and continuously.